

ABSTRACT

The present invention is characterized in that a casing 2 connected to an exhaust system 8, a honeycomb filter 3 placed in the inside of the casing 2, the honeycomb filter having a plurality of cells partitioned by partition walls, and plasma generation electrodes 6 placed being faced each other by sandwiching the honeycomb filter there are included, particulate matter contained in an exhaust gas is collected by the honeycomb filter 3, nitrogen monoxide contained in the exhaust gas is oxidized to nitrogen dioxide by nonthermal plasma generated between a pulse electrode 4 and an earth electrode 5 constituting the plasma generation electrodes 6, combustible materials in the particulate matter collected and deposited on the surface of the partition walls are removed through oxidation by the nitrogen dioxide produced. As a result, the honeycomb filter 3 can be regenerated.